

AMENDMENTS TO CLAIMS

1-24. (canceled)

25. (previously presented) A method of fabricating a compound semiconductor device, comprising the steps of:

(a) forming a first group III-V compound semiconductor layer not containing N epitaxially on a substrate;

(b) exposing a surface of said first group III-V compound semiconductor layer to an atmosphere containing N;

(c) forming, after said step (b), a second group III-V compound semiconductor layer on said first group III-V compound semiconductor layer epitaxially, said second group III-V compound semiconductor layer containing therein N as a group V element,

wherein said atmosphere is substantially free from a group III element.

26. (original) A method as claimed in claim 25, wherein said atmosphere contains an organic nitrogen compound and a source gas of a group V element other than N.

27. (original) A method as claimed in claim 25, wherein said atmosphere contains DMHy.

28. (currently amended) A method as claimed in claim 27, wherein said step of exposing ~~exposure~~ is conducted at a temperature of about 600°C.

29-34. (canceled)

35. (currently amended) A method of fabricating a semiconductor layered structure comprising a first epitaxial layer of AlGaInNP having a composition represented by compositional parameters x_1 , y_1 and z_1 as $\text{Al}_{x_1}\text{Ga}_{y_1}\text{In}_{(1-x_1-y_1)}\text{N}_{z_1}\text{P}_{(1-z_1)}$ ($0 \leq x_1 < 1, 0 < y_1 \leq 1, 0 < z_1 < 1$) ($0 \leq x_1 < 1, 0 < y_1 \leq 1, 0 < z_1 < 1$), a pair of second epitaxial layers ~~layer~~ of AlGaInP having a composition represented by compositional parameters x_2 and y_2 as $\text{Al}_{x_2}\text{Ga}_{y_2}\text{In}_{(1-x_2-y_2)}\text{P}$, each said second epitaxial layer being disposed adjacent to and respectively on either side of said first epitaxial layer, and a pair of third epitaxial layers ~~layer~~ of AlGaInP having a composition represented by compositional parameters x_3 and y_3 as $\text{Al}_{x_3}\text{Ga}_{y_3}\text{In}_{(1-x_3-y_3)}\text{P}$, each said third epitaxial layer being disposed respectively between said first and second epitaxial layers, said first through third epitaxial layers maintaining an epitaxy with each other, said compositional parameters being set so as to satisfy the relationship $0 \leq x_3 \leq x_1 < x_2 \leq 1; 0 < y_3 \leq 1$ $0 \leq x_3 < x_2 \leq 1; 0 < y_3 \leq 1$, said method comprising the steps of:

forming said second epitaxial layers by using a metal organic compound of Al for the source of Al;

forming said first epitaxial layer by using a metal organic compound of Al for the source of Al; and

~~forming said second epitaxial layer by using a metal organic compound of Al for the source of Al;~~

forming said third epitaxial layers ~~layer~~ by using a metal organic compound of Al for the source of Al.

36. (original) A method as claimed in claim 35, wherein said step of forming said first epitaxial layer is conducted further by using an organic compound of N as the source of N.

37. (original) A method as claimed in claim 36, wherein said organic compound is selected from one of dimethylhydrazine and monomethylhydrazine.

38. (new) A method of fabricating a compound semiconductor device, comprising the steps of:

(a) forming a first group III-V compound semiconductor layer not containing N epitaxially on a substrate;

(b) introducing nitrogen into a surface of the first group III-V compound semiconductor layer by exposing said surface of said first group III-V compound semiconductor layer to an atmosphere containing N and substantially free from a group III element; and

(c) forming, after said step (b), a second group III-V compound semiconductor layer on said first group III-V compound semiconductor layer epitaxially, said second group III-V compound semiconductor layer containing therein N as a group V element.

39. (new) A method as claimed in claim 38, wherein said atmosphere contains an organic nitrogen compound and a source gas of a group V element other than N.

40. (new) A method as claimed in claim 39, wherein said atmosphere contains DMHy.

41. (new) A method as claimed in claim 40, wherein said step of introducing is conducted at a temperature of about 600°C.